



*Journal Geophysical Research - Atmosphere*

Supporting Information for

**Long-term (2000–2020) variability of in situ time series of Carbonyl Sulfide**

*C. Serio<sup>1\*</sup>, S. Montzka<sup>2</sup>, G. Masiello<sup>1</sup>, V. Carbone<sup>3</sup>*

<sup>1</sup>Scuola di Ingegneria, Università degli studi della Basilicata, Potenza, Italy.

<sup>2</sup>NOAA Earth System Research Laboratory, Boulder, Colorado, USA

<sup>3</sup>Dipartimento di Fisica, Università della Calabria, Rende, Italy.

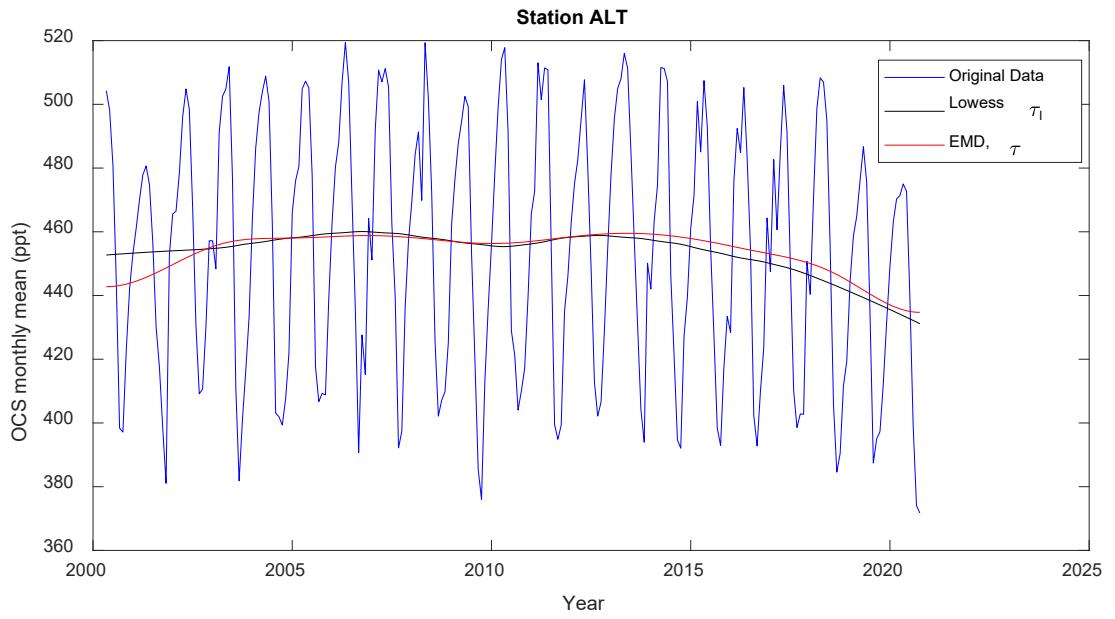
]

**Contents of this file**

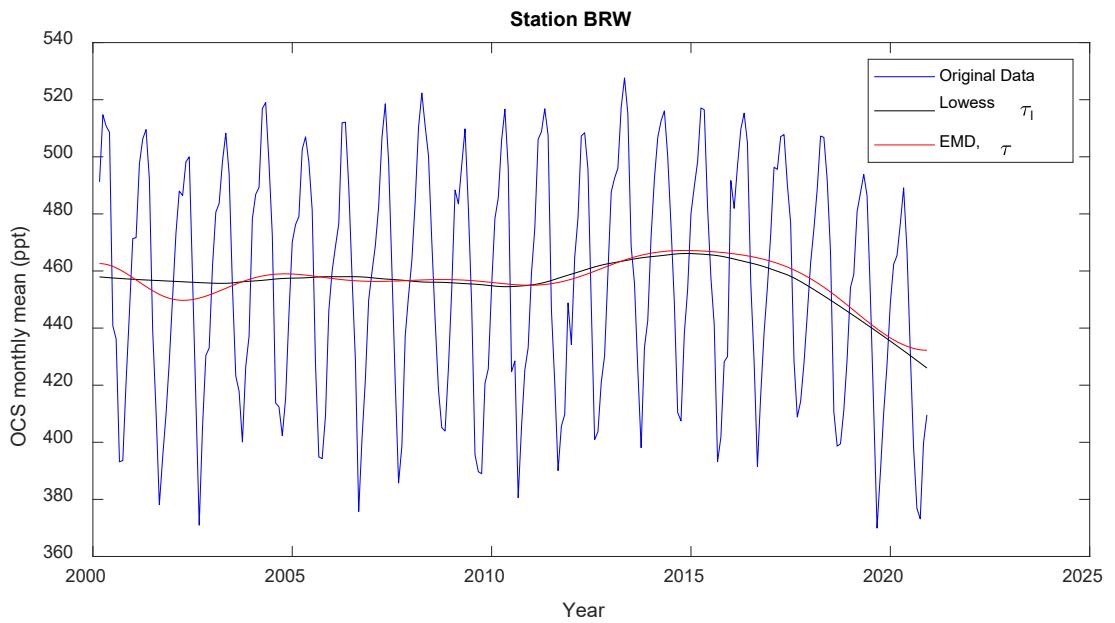
Figures S1 to S14

**Introduction**

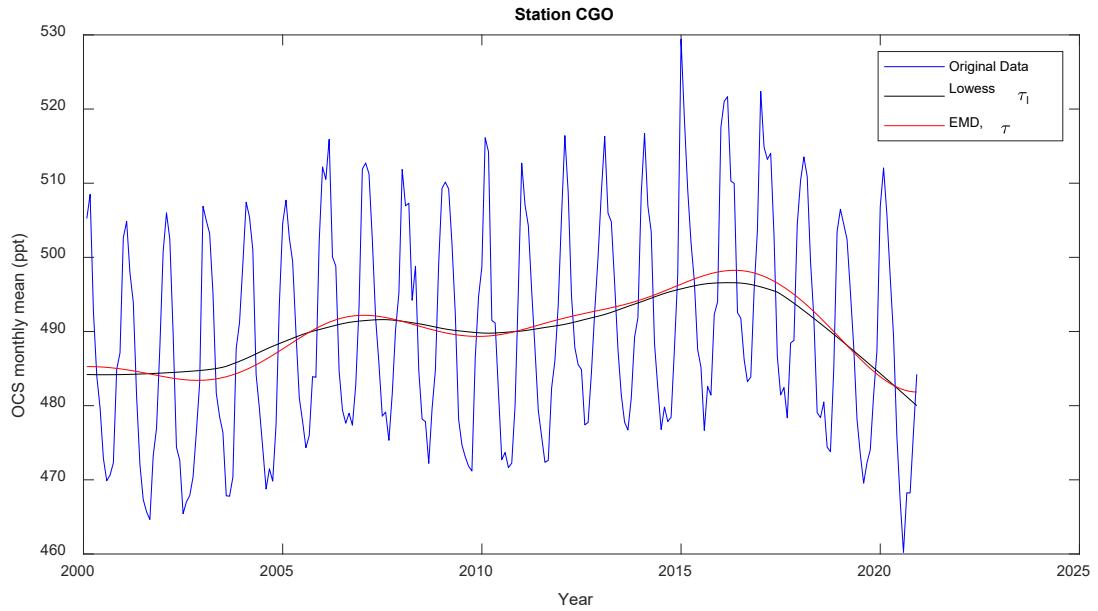
The supplemental material compares the OCS monthly times series (flask measurements), the *lowess* trend, and the EMD trend for the 14 stations examined in the present work. The list of the 14 stations and related acronyms can be found in Tab. 1 of the paper.



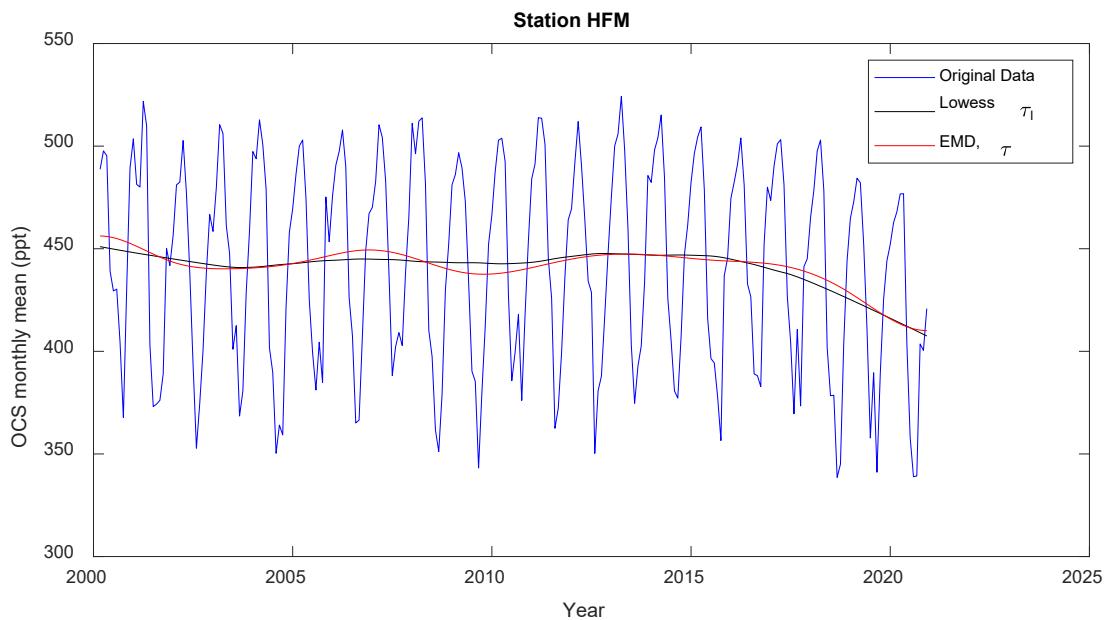
**Figure S1.:** ALT station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



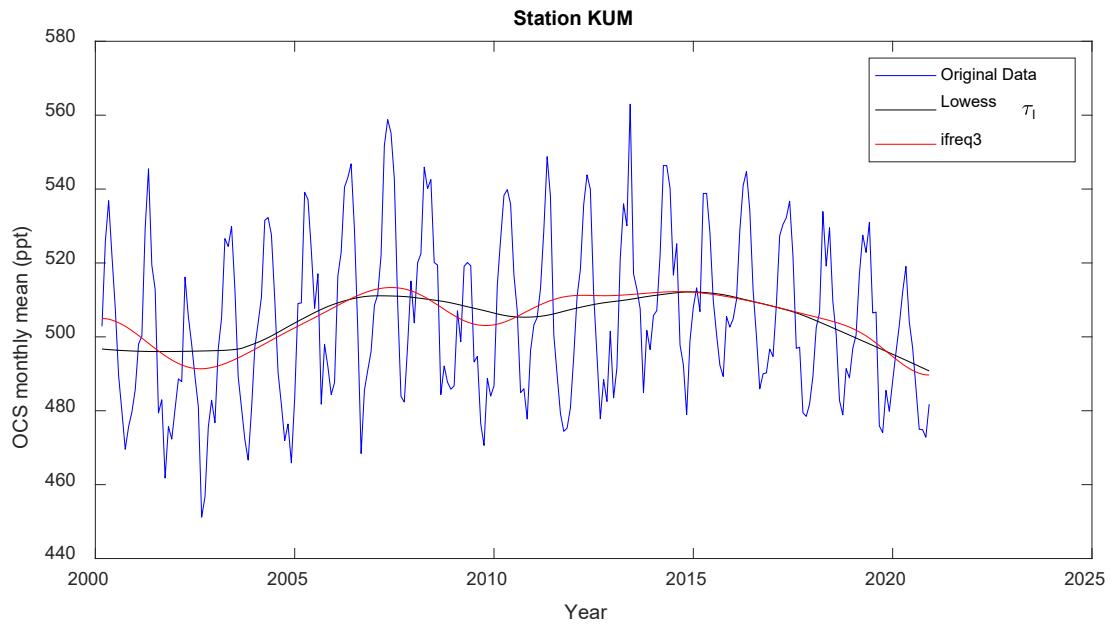
**Figure S2:** BRW station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



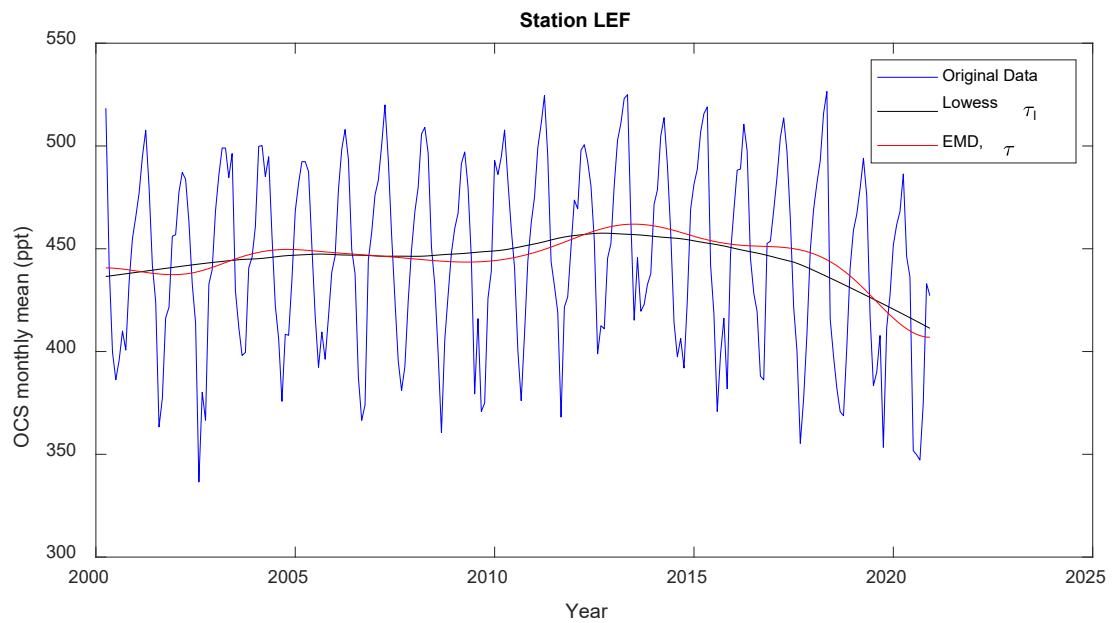
**Figure S3:** CGO station: Original OCS time series, *lowess* trend,  $\tau_l$  and EMD trend  $\tau$ .



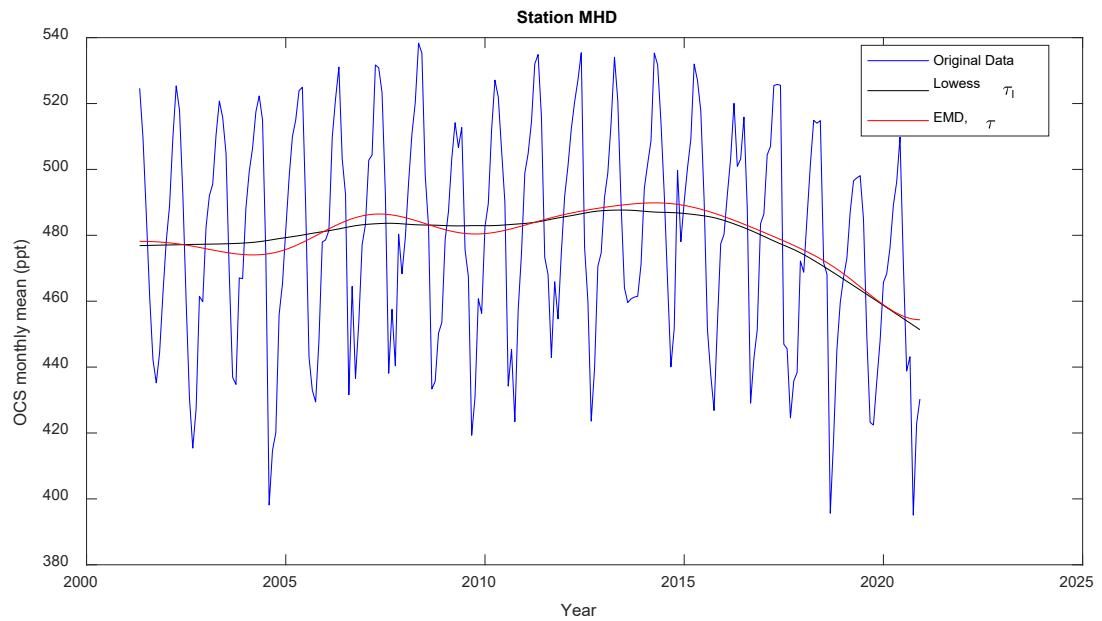
**Figure S4:** HFM station: Original OCS time series, *lowess* trend,  $\tau_l$  and EMD trend  $\tau$ .



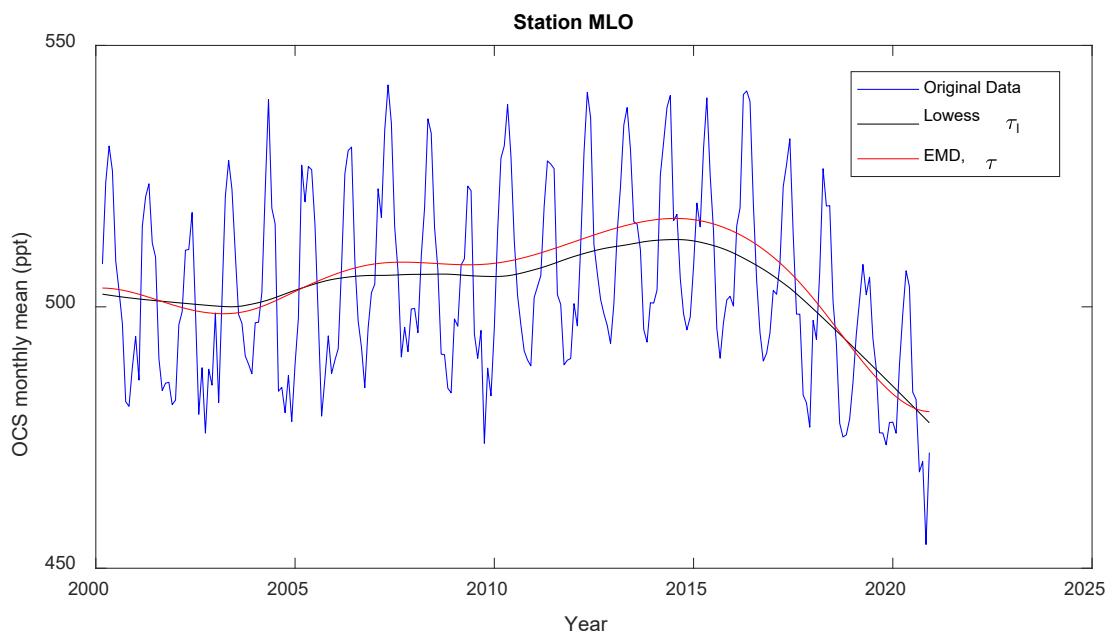
**Figure S5:** KUM station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



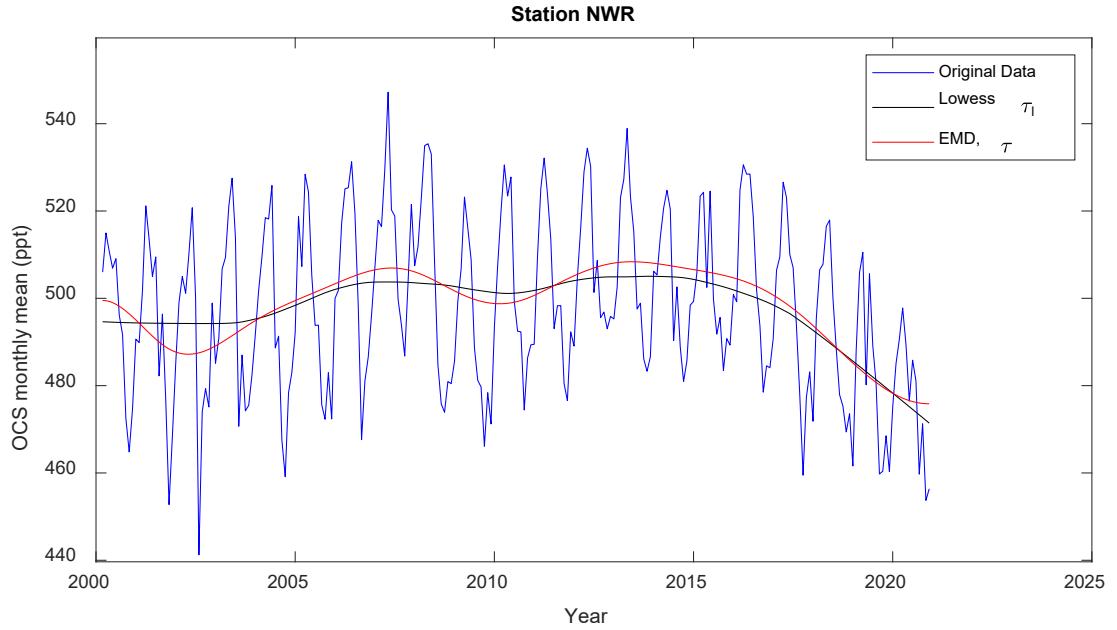
**Figure S6:** LEF station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



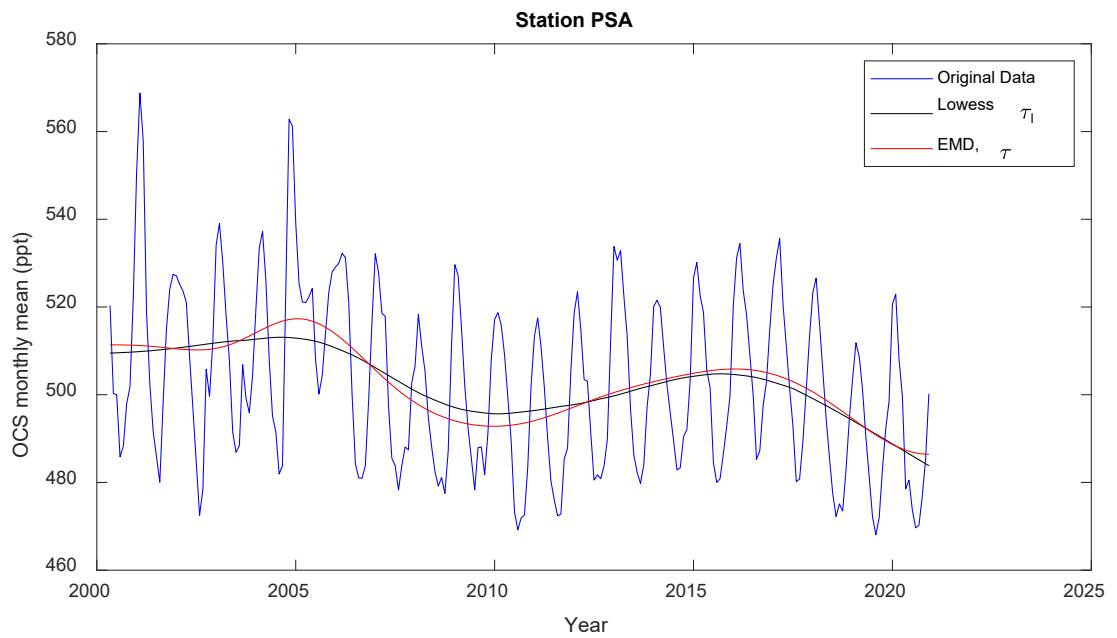
**Figure S7:** MHD station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



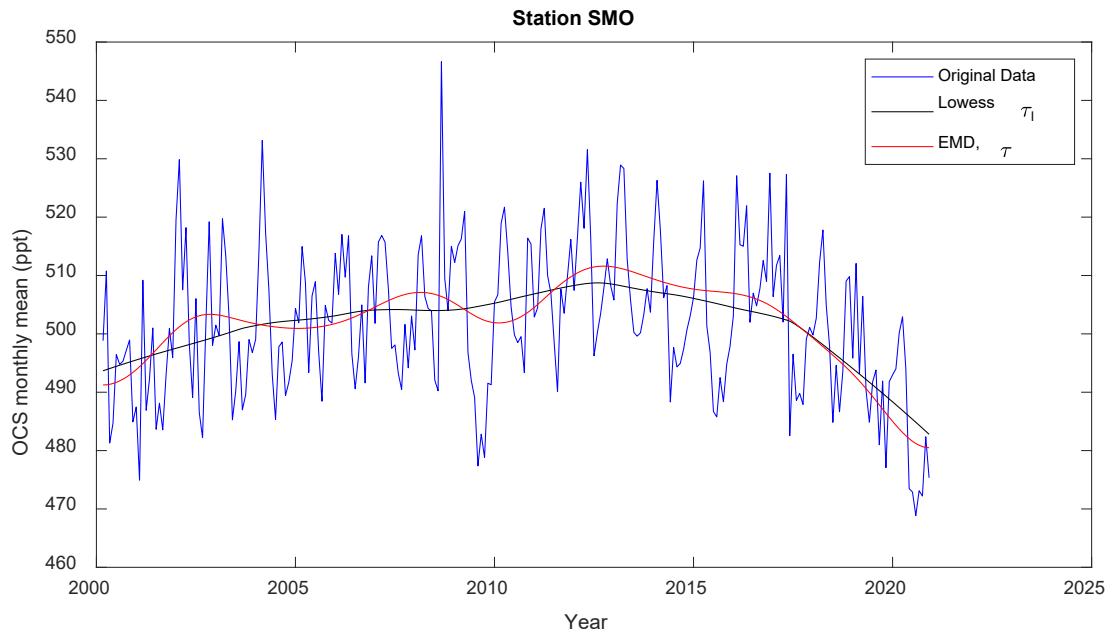
**Figure S8:** MLO station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



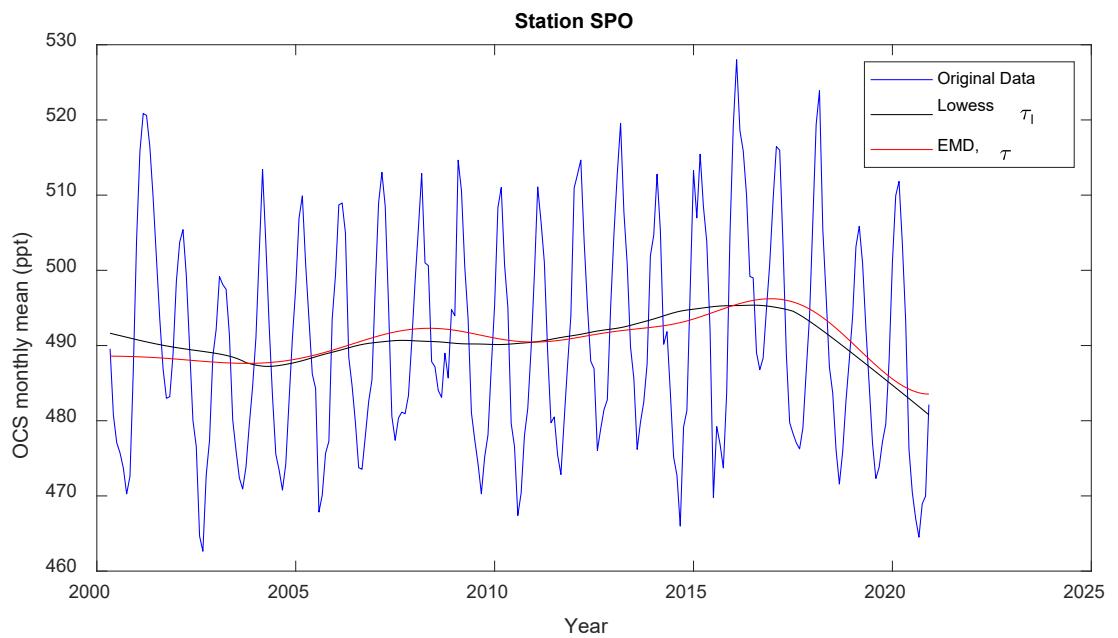
**Figure S9:** NWR station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



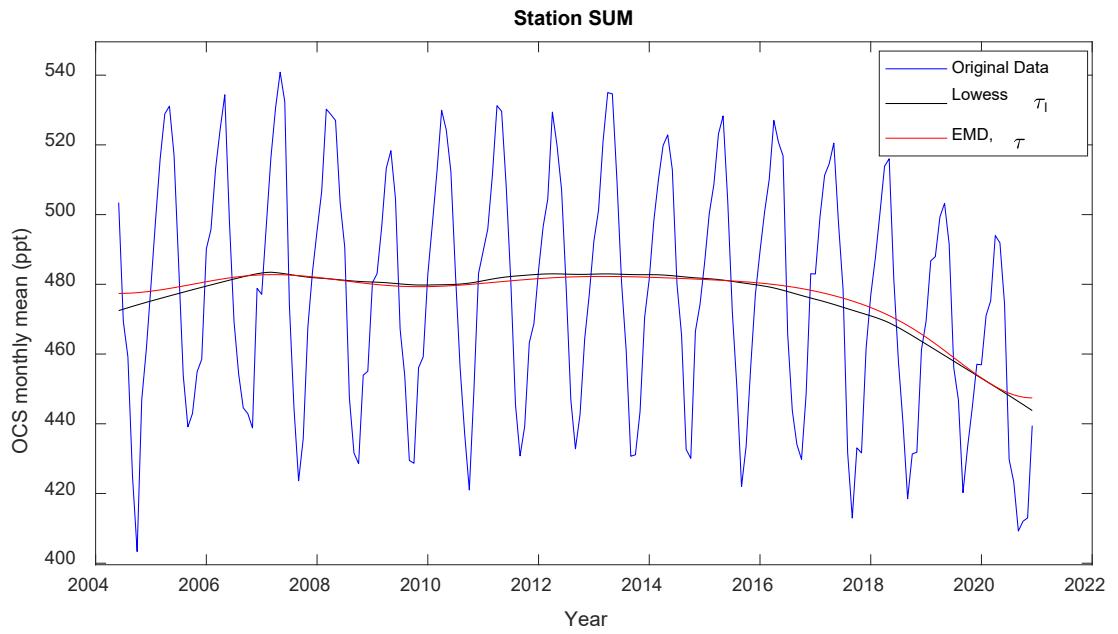
**Figure S10:** PSA station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



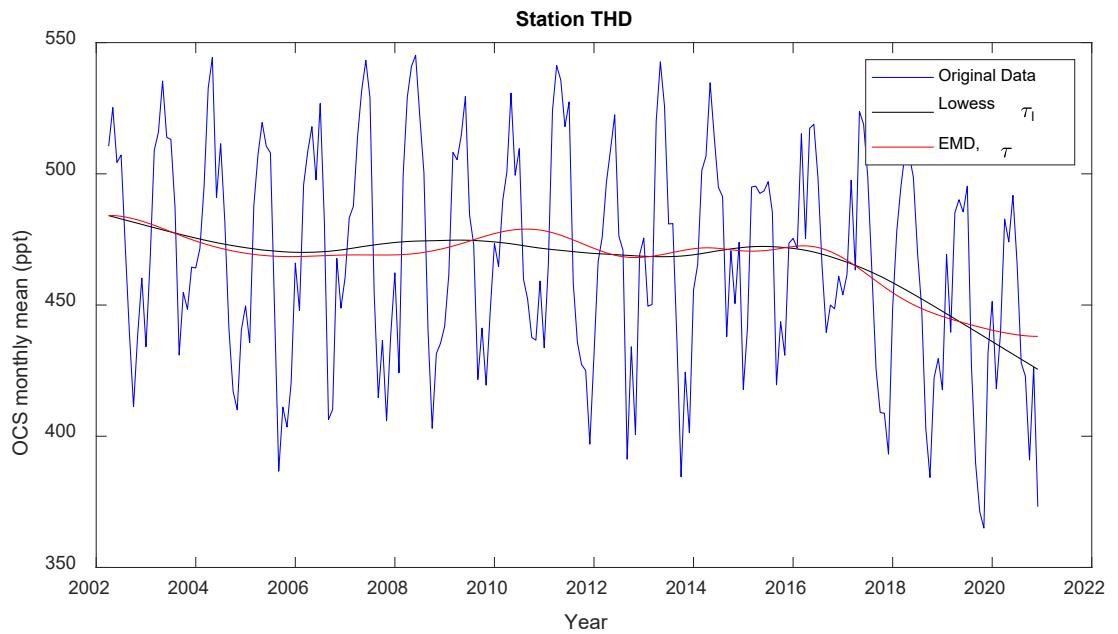
**Figure S11:** SMO station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



**Figure S12:** SPO station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



**Figure 13:** SUM station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .



**Figure S14:** THD station: Original OCS time series, lowess trend,  $\tau_l$  and EMD trend  $\tau$ .